31.05/2

ESSAY

ON

WARM AND VAPOUR BATHS:

WITH HINTS

FOR

A new Mode of applying Heat and Cold, for the Cure of Disease, and the Preservation of Health.

ILLUSTRATED BY CASES.

By EDWARD KENTISH, M. D.

PHYSICIAN TO THE BRISTOL DISPENSARY.

Aqua balnei stagnans, non valde efficax est, corpus autem idem suspende in vapore aquæ calidæ, centies certe potentius ab hoc vapore mutabitur, quam a quiescente aquâ. BOERHAAVE PRÆLECT. ACAD. *Sect.* 779.

LONDON:

PUBLISHED BY JOSEPH MAWMAN, POULTRY.

Bristol: printed by A. Brown, at the Mirror Office.—Sold by B. Barry, the other Booksellers, and

AT THE BATH-HOUSE, No. 56, PARK-STREET.

1809.

CASES.

A.—Case of Chronic Catarrh, from the change of a warm to a colder climate.

B.—Of Chronic Diarrhœa.

C.—Of Chronic Catarrh in an Adult.

D.—Of Asthma.

E.—Of Water in the Chest, with dropsical Swellings in the Legs.

F.—Of Lumbago.

G.—Of Leprosy.

H. and I.—Of Scirrhous Tumour of the Breast.

K.—Of Enlarged Messenteric Glands.

Conclusion.

ESSAY ON BATHS, &c.

INTRODUCTION.

CHAP. I.

IT is expected that an Author, in addressing the Public, should state his motives for such a measure. In conformity with custom I will, therefore, mention what has induced me to address them on the subject of Baths. When I resided at Newcastle-upon-Tyne, I possessed an establishment of Baths for several years, of every description; I had then an opportunity of appreciating the effects of them, both upon healthy subjects, and those afflicted with diseases. Since my residence in Bristol, I have frequently had to regret the want of a vapour Bath; it was an instrument which, as an auxiliary, I had generally found useful in removing very obstinate complaints—particularly Rheumatic and Gouty affections, and also glandular obstructions, of both young and old subjects. The relief afforded by vapour bathing

at Chelsea, at Knightsbridge, at York, at Manchester, and at Newcastle, is of such a nature as to leave no doubt of its efficacy. Doctor Bardsley, in his Medical Reports, has given his testimony to the superior power of heat, applied through the medium of vapour, to heat applied by the means of warm water. These are the only sources whence we can derive information of the powers of the vapour bath in England. The body of evidence I shall bring to shew their general use, as well as great utility in various parts of the world, will enable us to form some opinion of their efficacy. In this investigation of the power of heat upon the human system, I wish to avoid being regarded as a partizan ; in noting the effects of heat, I do not mean to deny, or depreciate the value of the effects of cold upon the system ;—on the contrary, by the ascertaining of fixed principles, in the application of both heat and cold to the body, effects may be produced, which a prejudice for either would prevent. Nature herself delights in change —the seasons change, day and night, heat and cold, wet and dry, succeed each other ; the human system constantly changes, there is an alternate contraction and expansion of the heart,

activity and rest, hunger and satiety, follow in their turns. This train of reasoning might be carried much further in physical causes, and would even bear comparison in elucidating many moral effects, but enough has been said to shew that it would be wrong to have too great a bias towards the application either of heat or cold; because in that case, we should prevent ourselves from benefitting by the experience of a whole nation, who by their practice shew us the safety and utility of accustoming our bodies to great vicissitudes of heat and cold, by which means they render themselves insensible to those smaller variations of temperature which are so frequent in the atmosphere, and from which, in our climate, we almost entirely draw our large stock of maladies. I do not mean to recommend the Russian mode of bathing in its full extent, although, from personal experience, I can assure my readers of its safety. I shall only remark in this place, that the frequent use of hot and cold baths, at the intervals of one, two, or three days, is a practice attended with the most beneficial effects: the habit which the system thus acquires of accommodating itself to the impressions of a high and a low temperature, ren-

ders it less suseeptible of morbid torpor, from the frequent vicissitudes of our humid and variable climate, than it otherwise would be. This practice also obviates the danger, which by the bye is generally magnified, that may arise from the relaxing and debilitating effects, so mueh dreaded by invalids from the use of warm bathing, and which can beeome weakening only if earried to too great an excess; but is not this equally the case with every other stimulant we employ? yet we must not rejeet the use of any, however we may deplore the abuse of any or all of them.

The authors of our own country who have written in favour of cold Baths, have as generally decried hot Baths; it is the same with the continental writers. A variety of experiments made by them to prove their power, has been upon dead matter —pieees of leather, skin, and parchment, (steeped in hot or eold water,) have been brought as evidence of their relaxing or contracting power, and their effects have been argued upon from such data as these, totally overlooking the vital or living principle, whieh alone, is acted upon by the immediate application, and the reaction of which

is calculated upon by experience. It is precisely the same with those authors who have advocated the cause of warm Baths; they have decried the use of cold Baths. I have not yet met with a medical author, who has investigated the action of the one power, and the other, has duly appreciated them both, and made them subservient to the production of effects in the system which neither of them could have done alone; although I am aware that Galen, and some of the fathers of medicine, have employed hot and cold bathing in fevers—as have also the Russians from time immemorial; but this is not the manner in which I have used and recommended them. My method is that of an alterative plan, by using the vapour Bath to remove obstructions, and to alternate the cold Bath to prevent debility.

In the course of this essay, I shall have an opportunity of shewing some cases, in which the alternate use of hot and cold bathing has been attended by the most salutary effects; and when this practice is more generally known, I have no doubt it will tend to increase the stock of health of numerous invalids.

No class of diseases is more difficult to relieve, than the different species of rheumatism, both acute and chronic; the former, if not reduced by moderate sweating, produces a morbid sensibility of all the larger articulations, which frequently ends in effusions, that lead to a tedious and precarious convalescence. Having in some of these cases observed the cold Bath produce wonderful effects, I have been led to adopt a practice which has been attended with great success. I could not shut my eyes to the fact, that very many rheumatic attacks were carried off by sweating; but as it was also evident that the system could not bear uninterrupted sweating for several days, or rather that no crisis could continue long enough to prevent the morbid action returning upon the deeper seated membranes, it occurred to me, that if I could cause many lesser crises, or crisisses, and obviate the return of morbid action to these membranes, I should facilitate the cure. I have been enabled to do this by the use of hot and cold Baths. The vapour Bath excites the action of the superficial arteries, by which the determination of blood to the deeper seated parts is prevented; this *engorgement* of the surface is ter-

minated by sweating, which forms the crisis : this state is for a limited period, and as it is excited at will, so it should always cease before it creates debility. To obviate which, and to prevent the morbid catenation of actions which sometimes establish themselves in the system from habit, I have found the cold Bath of the utmost use. In speaking thus on the use of Baths, I must beg it to be understood, that I am not recommending their use to the exclusion of other means ; on the contrary, I only mean them as auxiliary, and recommend every article in the materia medica, which will unite with them to restore healthy action. The mode of applying Baths on the above principle, is calculated to be of infinite service in the cure of a variety of diseased actions ; more particularly in those gouty and rheumatic affections which are deep seated on the membranes and ligaments of the joints. The stimulating of the cutaneous vessels, and the drawing of a greater quantity of blood to the surface, cause a revulsion, by which the morbid and sensitive membranes are relieved ; and if effusions have taken place, I have generally remarked after this artificial crisis, that a greater activity of the absorbents follows, by

which means considerable effusions have been reabsorbed; and in this point of view, the power the Bath exerts upon the system, may be of great use in a variety of complaints. In the course of this essay, its power and action will be explained; by which the faculty will be enabled to apply it as a powerful auxiliary in many complaints,—particularly in all diseases of the skin, which are so unpleasant to the suffering individual; and as tedious as they are difficult to be treated by the practitioner. In regard to the use of Baths in health, or as a preventative to disease, I have already given a hint, by which they may be rendered of the utmost use, in destroying that morbid susceptibility of taking cold, which our climate and customs so much expose us to. As a luxury, they need no observation; the description which I have taken from Mons. Savary will be sufficient in that respect. The experience I have had in the use of baths, enables me to say, that we possess no means so well adapted to keep the skin in a proper and healthy state, as by the frequent and various modes of bathing which may be adopted. The perspirable matter which softens and gives pliability to the surface of the body

during the action of our limbs in locomotion, is more easily regulated by the use of bathing than by any other means; and the power of regulating this secretion, enables us to relieve a variety of morbid secretions of different parts of the body.

We are indebted to a foreigner for the introduction of vapour Baths into England. Doctor Bartholomew Dominiceti, a native of Salo, in Italy a town belonging to the Venetian state, came into England, about the year 1755; he first settled at Bristol, and afterwards removed to London, and formed an establishment at Chelsea: his son, in the year 1779, opened a set of Baths in Panton-square, near the Haymarket. Many cures being performed by the aid of these Baths, the late Sir John Fielding assisted Dr. Dominiceti in giving publicity to them; he verified the cases, and circulated them by enclosing the account to the magistrates, with whom, in different counties, he corresponded. By these means, a considerable degree of interest was excited, and similar establishments were attempted in various parts of the kingdom; but they all more or less partook of the defects of the original one—namely, too exclusive

advantages to the proprietors, instead of laying them open, that the faculty might vie with one another, who could perform the most by their use. When a patient was recommended to Dr. Dominiceti, he became in a manner lost to the rest of the faculty. Thus a division of interests produced the effects it must ever do—strife, clamour, and abuse, on both sides. On the one hand the power was denied, or depreciated; and on the other it was over valued, as we may judge by the following specimen. Dr. D. writes thus—" My newly invented, arbitrarily heated, and medicated Baths, are strongly recommended in all obstinate maladies, particularly in fevers, obstructions, tumours, cancers, contractions, weaknesses, leprosy, rheumatism, gout, gravel, disorders in the uterus, bladder, or urinary passages, and in scorbutic complaints; they cleanse the whole body, and eradicate the scurvy and lues venerea." Had the Doctor secured to himself the curing of all the above complaints, he would have left very little for his brethren to have done. I am very far from believing that Baths will cure the above complaints; though at the same time, there are few of them, during the treatment of which, the ap-

plication of heat or cold, by the means of bathing, may not be of essential use. Had the Doctor contented himself with investigating the power of such applications, and given the result of his experience, as a rule and guide for others to have proceeded upon, he would have merited the thanks of the faculty, and done an important service to society at large.

Fully impressed with the advantages to be derived from a well-arranged method of applying heat, and cold, generally and partially to the human body, I have made several attempts to induce others to form such an establishment, but have never succeeded; it would have been in vain to write, expatiating on its utility, unless the means of effecting it were procured; in this dilemma, I have been induced to provide such means for the use of the faculty and the public, at the Bath House in Park-Street. I have placed intelligent attendants, with powers to apply general, or partial heat or cold to any part of the body, according to the wishes of the prescriber. Having observed the error by which a former attempt to introduce a more general use of Baths failed, I the more

readily follow this mode of throwing them open, as I have already experienced the candour of the faculty on a similar occasion, viz. when I possessed the Baths at Newcastle-upon-Tyne, erected by Messrs. Hall, Gibson, and Abbs, which from being neglected and in disuse when I first occupied them, were much used by the faculty, when they found themselves at liberty to order them as freely as their own. The plan I purpose pursuing in the following essay, is to give a short sketch of the Baths as used by the Greeks and Romans, from which, the great importance these enlightened people attached to such establishments will be apparent, and then an account of the vapour Baths of the Russians, Turks, and Indians; after which I shall endeavour to point out some of the principal effects of heat and moisture when applied to the body in an aeriform state—to which I shall add a few cases selected from a number of others, to elucidate the power and effects of vapour bathing in the restoration of health.

CHAPTER II.

ON BATHS IN GENERAL.

NECESSITY and want, those imperious masters, who ever govern man, have taught him to choose the fittest aliments for his sustenance, to search out the properest places where he might be secured against the pinching cold of winter, or the sultry heat of summer, to adapt cloathing to guard his body from external injury. These same masters have pointed out to him the utility of washing and cleansing himself; therefore the first Baths would be the lakes, rivers, and natural springs, consequently bathing is natural to man, and must have been in use in the earliest periods of history, or in fact previous to history itself. The inhabitants of the hot climates of Asia, that cradle of mankind, must first have used Baths; they were in great repute among the Egyptians, and if we may credit Homer, private Baths of un-

common neatness were in use in his time. Telemachus and Pisistratus were attended at the Bath by the most beautiful slaves, who perfumed them, and assisted in adorning them in the most sumptuous garments; the fictions of poetry may have exaggerated the luxury of the ancients, but certain it is, that a great portion of hospitality depended upon the administration of such refreshment as arose from the use of the Bath. The Romans who conquered the Greeks by their arms, were excelled by them in their knowledge of the arts which contribute to the comforts of life; they imitated them in all their great works, and among the rest in the establishment of their institutions for schools of exercise, or gymnasia. The prodigious remains of some of the Roman Thermæ (or hot Baths,) shew us the great estimation in which such edifices were held; every thing that could contribute to the health and exercise of the body, as well as every thing that could give energy and acuteness to the mind, was concentrated in one point: in the intervals of the bodily exercises, the philosophers exercised their province of speculation, thus combining the most perfect system of education, viz. the unfolding all the physical

and moral powers to their greatest extent. To convey an idea of such an establishment, I shall give an account of a suite of buildings for this purpose, which consisted of six principal apartments.

The first was called Apodyterium, where the frequenters of the Bath were accustomed to undress, it was furnished with tables to receive the vestments of the Bathers, and guards, called Capsarij, to take care of them. This room was also called by the Romans Spoliatorium. All the Baths were not provided with this convenience. Lucian says, that in those which were without it, the Frigidarium was used for this purpose.

The second apartment was the cold Bath, named Frigidarium by the Romans, this room was generally exposed to the North, and served, as just mentioned, for the Apodyterium in such Baths, where that was wanting, and of course would then be the first apartment.

The third room was the Tepidarium. Its principal use was by the temperate air it contained,

to prevent any bad effects that might be occasioned by passing too suddenly from the warm to the cold apartment; this might properly have been called the annealing room. In the paintings of the Baths of Titus, this apartment is found between the Frigidarium, and the Concamerata Sudatio. The Tepidarium according to historians, joined the Frigidarium to the warm Bath; and for that reason is termed by Pliny, Cella Media, or the middle room. Galen gives it the same name, and supposed it acquired this appellation not only on account of its situation in the centre, but also from its temperature, for, he says, this chamber was as many degrees colder than the warm Bath, as it was degrees warmer than the cold Bath.

The fourth chamber was that which contained the stove, and was called Laconicum, from the name of the oven which warmed it, this term was originally derived from Laconia; this apartment contained a dry heat, and was surrounded by niches, called Sudationes, or sweating seats, where those who used the dry Baths, seated themselves, as may be observed in ancient paintings. This

room, according to Vitruvius, joined the Tepidarium, and communicated to it a more temperate heat; a sort of furnace was suspended at one corner of the chamber, of a circular form, terminating in a small cupola, open at the top. The Laconicum itself was nothing more than a furnace, going under the room bearing its name, and communicating heat to the rest of the buildings by subterraneous pipes. In the paintings of Titus's Baths, it is called the Concamerata Sudatio.

The fifth apartment was the Balneum, or warm Bath, called Thermolousia, and was the most resorted to. Its size was proportioned to the number of those who bathed in it at once. Its breadth was a third less than its height, without including the gallery called Schola, which was carried round it, and terminated near the bason, with a little wall for the bathers to lean against. This gallery was sufficiently large to contain those who waited for their turns to bathe. The middle of the room was occupied by a bason called Piscina, or by a bathing place, which had the name of Alveum, as may be seen in the paint-

ings of ancient Baths. The Bath was placed immediately below the only window by which the light was admitted, that it might not be darkened by the shadows of those who were walking in the gallery.

The sixth apartment was the Eleothesium, or Unctuarium. Here were preserved the oils and perfumes used both in entering and quitting the Bath ; it was so constructed as to receive a considerable degree of warmth from the furnace which heated the other apartments. The bottom of this furnace formed an inclined plane, from the opening where the wood was put in, for heating it ; by which means it fed itself, and would burn more rapidly : it spread under several of the apartments already described, and extended its influence to all.

These six apartments were destined to the use of the bathers ; but many other appendages were attached to form a Gymnasium, such as places for the wrestlers, &c. &c. and shady walks for the philosophers, &c. &c. The magnitude of such buildings may be estimated when we are informed,

that the Hot Baths of Dioclesian would accommodate eighteen hundred bathers at one time; and the importance of this luxury to the Romans may be appretiated, when we are assured, that there were above eight hundred public Baths in Rome. The regulation of these establishments occupied the legislators of Rome; several of the Emperors visited the Baths five or six times a day, and Adrian condescended to bathe with the people in the public Baths; by his example he restored order, and corrected many abuses which had crept into the conduct of the Baths. Suites of apartments were appropriated to the different sexes; and though Martial, the Poet, satirises the licentiousness of the Roman Baths, as admitting the promiscuous meeting of the sexes, yet there were strict laws against such abuses. As the Piscina, or large swimming Bath, was a warm one, they looked upon it as equally useful, either as a place where they took the exercise of swimming, or refreshed themselves after the fatigues of the other exercises of the Gymnasia. It was thought alike useful to every age, and they employed it with the view of keeping up their health, strength, and courage. The moderns seem, until lately, to have

had a very different opinion with regard to warm bathing: it has generally been regarded as relaxing, weakening, and enervating; and this opinion has descended from the physician to the people, so as to be regarded as an axiom. Marteau, Maret, and Macquart; with a host of continental names, have looked upon this as a settled point, and have reasoned accordingly. But surely the opinion of the Greeks, and Romans, from their extensive and national use of warm or tepid Baths, should claim some attention on what they were so competent to form a judgment upon.

Dr. Laurent, and Dr. Joubert inform us, that some of the illustrious Romans were accustomed to use the Bath seven or eight times a day; but every one made a duty of using it once a day. In times of public calamity, the greatest privation that the people could suffer, was suppressing the use of the public Baths. The allegories of the ancients agree perfectly with their extensive use of the warm Bath: the warm Springs were dedicated to Apollo; and so far were they from being esteemed debilitating, that some of them were dedicated to Hercules, the God of strength. Suidas,

Eustatius, and other ancient writers, make use of the term Balnea Herculea, as synonymous with warm Baths; not one cold Bath was dedicated to Hercules, but he is said to have found a natural warm Spring, whither he used to retire, with the view of recruiting his exhausted strength after any great exertion, from whence he arose a giant refreshed. There existed an altar dedicated to Hercules at the Baths of Thermopylæ; also in some Sicilian coins this demigod is represented in the act of bathing. Could we forget our prejudices we should cease to regard warm Baths as debilitating: for a great and polished people would not have been so absurd, as to have dedicated to the God of strength, that which they thought possessed an opposite effect. The ancients, who made great use of Baths, and were certainly in a situation, from their experience to appretiate the power and effects of warm Baths, always regarded them as strengthening.

Bathing among the ancients formed an article of the first necessity, for which they provided as they would for food, or cloathing; and, although in such constant and common use, it was held in

high estimation by the physicians in the cure of diseases, as appears from Strabo, Pliny, Hippocrates, and Oribasius. The first recorded instance of warm Bathing is Medea's use of it, who was said to boil people alive, because Pelias, King of Thessaly, died in a warm Bath whilst under her care. The first instance of cold Bathing, as a medicine, is Melampus's bathing the daughters of the King of Argos; the cold Bath was also used by Antonius Musa, physician to the Emperor Augustus, for the recovery of that Prince; but it fell into neglect after the death of Marcellus, who was thought to have been destroyed by its improper use.

From this slight view of the establishment of Baths, we find them of the first consequence among the Greeks and Romans: with the latter they were publicly and privately of the highest import; according to Dion, Macœnas was the first who built a Bath at Rome. Agrippa, during his ædileship, constructed two hundred and sixty places, where the public were accommodated with hot and cold Baths, gratis; following this example of ingratiating themselves with the Roman

populace, Nero, Vespasian, Titus, Domitian, Severus, Gordian, Aurelian, Maximian, Dioclesian, and most of the Emperors, added to these edifices, on which were lavished the magnificent decorations furnished by the spoils of Greece, and the other conquered provinces. The remains of the Thermæ Dioclesianæ, which occupied one hundred and forty thousand men several years in constructing, surpass all the rest in magnificence: a great part of them are still standing; and the vast arches, the beautiful and stately pillars, the extraordinary plenty of foreign marble, the curious vaulting of the roofs, the prodigious number of spacious apartments, and a thousand other ornaments, not only increased the splendour of ancient, but form at this day one of the chief ornaments of modern Rome.*

* See Rees's Cyclopædia.

CHAPTER III.

ON VAPOUR BATHS

OF DIFFERENT NATIONS,

More particularly as used by the Russians, Turks, and Indians.

HAVING given a short view of the Baths of the ancients, from which some idea may be formed of the high estimation such institutions were held in by most nations of antiquity, I shall turn my attention to the Russian Vapour Baths, and give such information respecting them as I have been enabled to collect.

Doctor Sanchez, physician to the late Empress of Russia, and correspondent member of the Royal Medical Society of Paris, sent a memoir to that society, in which he entered at large upon the usefulness of these Baths, in a general point of view, as influencing the great mass of the Russian population ; and a more particular one, as affecting

the cure of diseases. He is of opinion, that their mode of bathing surpasses in usefulness, convenience, and efficacy, every thing that the Greeks, the Romans, or the Turks, were possessed of, whether used with a view to restore or to preserve health. In them you find united, all the advantages which are to be looked for in the modern Roman and Turkish Baths. The Vapour Bath is the more commodious, as it contains, in one apartment, all the conveniences which, in the others, are dispersed in four or five different rooms. Mr. Tooke, in his view of the Russian empire, gives us some account of their Baths; he says, they make use of few medicines, that the Vapour Bath supplies the place of all other remedies, and is in such general use, as to produce a decided influence on the physical character of the nation.

This venerable relict of the manners of the ancient world, is now almost entirely confined to the oriental nations; where it administers both to health and luxury, and is enforced by the precepts of their great law-giver, Mahomet, who has identified it with his religion. Russia and Hungary are at present, in this quarter of the world, the

only countries where it still remains the custom to bathe after the manner of the ancients. In Russia, particularly, the Bath makes so necessary a part of the system of living, that it is used by people of every age, and in all circumstances; by infants, by women at their lying in, in almost all sicknesses, before and after a journey, after hard work or excessive exercise, to obviate the effects of fatigue. The Bath is a necessary of life so indispensable to the common people, that they frequent it as often as possible; well or ill, and without any particular occasion, once a week at least. Persons in the middle station of society, and in good circumstances, as well as the great in general, construct Vapour Baths after the Russian fashion, in their own houses.

The Baths in Russia have been common from time immemorial; they are described by Nestor, so long ago as the eleventh century, precisely as they are constructed at present. Hungary is the only country which can still shew Baths equal in magnificence to those of the ancient Romans. In Russia, on the contrary, they are always on that simple construction, which bespeaks their primitive and most essential destination.

The Baths in Russia are under the care of the police, and the hire paid for them is a source of revenue. Their product is very trifling, not exceeding, for the whole empire, thirty-eight thousand rubles. These buildings usually consist of mean wooden houses, situated, whenever it is possible, by the side of a running stream; in the bath-room is a large vaulted oven, which, when heated, makes the paving stones lying upon it red hot; and adjoining to the room is a kettle, fixed in masonry, for the purpose of holding boiling water. Round about the walls are three or four rows of benches, one above another, like the seats of an amphitheatre. The room has little light, but here and there are apertures for permitting the vapour to escape; the cold water which is wanted being let in by small channels. Some have an anti-chamber for dressing and undressing, but in most of them this is done in the open court yard, which, on that account, has a boarded fence, and is provided with benches of plank. By far the majority of the Baths are constructed as they are here described. In the country, in parts where wood is scarce, they sometimes consist of miserable caverns, commonly dug in the

earth, close to the bank of some river. In the houses of wealthy individuals, and in the palaces of the great, they are formed upon the same construction, but infinitely more elegant and convenient. The heat of the bath-room is usually from 32 to 40 degrees of Reaumur, (that is, from about 114 to 132 of Fahrenheit). Hot water is thrown every five minutes upon hot stones; by these means the heat is considerably increased, especially in the upper part of the building.

The bathers recline on the benches, in a state of nature; and they perspire more or less in proportion to the heat of the humid atmosphere in which they are enveloped. In order the better to promote perspiration, and completely to open the pores, they are first rubbed, and then gently flagellated with leafy bunches of birch. After remaining a while, they quit the sweating bench, and wash their body with warm or cold water, and at last plunge over head in a large tub of water. Many people throw themselves immediately from the bath-room into the adjoining river, as the youths of ancient Rome used to leap

into a Bath, after the violent exercise of wrestling,* or roll themselves in the snow, in a frost of ten or more degrees of Reaumur.

The Russian Baths are therefore Sweating Baths, not the Roman Tepidaria and Calidaria, of a moderate warmth ; but if used to their extent, they are violent sweating baths, which, to a person not in the habit of using them, might bring on a real, though a gentle and almost voluptuous swoon. They are Vapour Baths, not water, nor yet dry sweating Baths ; herein they differ from all the Baths of antiquity, as well as from those of the modern orientals ; and this is also their essential excellenee, that they are beneficial in such a variety of cases, in whieh hot water baths would be useless, or even pernicious. They are, farther, salutary Baths, as they promote eleanliness, assist the perspiration, render the skin soft and smooth, &c. and not voluptuous Baths, as among the Greeks and Romans. All the inventions of effeminacy and luxury are entirely obviated ; of anointing after the use of the Bath, (which in Rome was held so indispensable a requi-

* I believe the Roman Piscina was a warm swimming Bath.

site, that even the Emperors distributed oil among the people,) the Russian is perfectly ignorant. Instead of this, the sudden transition from heat to a rigorous frost, hardens his body to all the severities of climate, to every vicissitude of weather; a transition which seems unnatural or dangerous to us, only from the prejudice of a soft and an effeminate age. The Turkish ladies, who do not yield, in point of delicacy, to those of Europe, bear this sudden alteration of temperature equally well with the Russian peasant: they continue bathing, according to the testimony of Lady Mary Wortley Montague, at least four or five hours together, and without *catching* cold, though they go immediately from the hot Bath to the cool apartment; which was naturally very surprising to an English lady.

It is not to be doubted that the Russians owe their *longevity*, their *robust* state of health, their little disposition to certain *mortal* diseases, and their *happy* and *cheerful* temper, mostly to these Baths. The perspiration, the most *important* of all secretions, must continually go on better in a body constantly kept soft by bathing. A great number of impurities which, privily, lay in us the

train to tedious and dangerous distempers, are timely removed, ere they poison the blood and the juices. All exanthematic diseases are abated by bathing: consequently, then, the small pox; and if this dreadful disorder be actually less fatal in Russia than in other countries, this phœnomenon needs not be attributed to any other cause than their great use of vapour Baths.

Doctor Sanchez appears to be of the same opinion, from what he has said on the small pox, and other eruptive diseases. He likewise observes, that all indispositions, arising from violent exercise, producing chills, with all the attendant bad consequences; that inflammations of any part of the body, even if attended with external or internal tumours, and fever; may be successfully combated by the Russian Baths: also in all chronic diseases, arising from excesses of eating and drinking, and the gratifying of other inordinate pleasures, which debilitate and enervate both the body and mind, the attentive physician will find considerable aid, in the use of the Russian Baths.

The foregoing account conveys to us a lively idea of the extensive use the Russians make of

their Baths; and shews us, the immediate, as well as permanent effect, produced upon a nation which is so much addicted to their use.

We see that they dispel the first invasion of disease, and that they render the whole race less susceptible of disorders of the skin. That they have no effect in rendering the people who thus employ them, effeminate; those who are acquainted with the habits of the Russian peasantry, and soldiery, will bear ample testimony.

Having collected this view of the Russian vapour Baths, I will next treat of Turkish Baths, which seem to combine the Italian stuffa, or stove, with the Russian vapour Bath.

Bathing with the Turks, as formerly with the ancients, makes a part of their daily want, and is used as a luxury; for in every town, and even village, there is a public Bath. The necessity of cleanliness in a climate where perspiration is so copious, renders frequent ablutions necessary: this was observed by their great lawgiver, Mahomet, who blended it with the institutes of his religion. Of these Baths, and of the manner of using them,

Monsieur Savary has given us some account in his letters from Egypt :—The first apartment, in going to the Bath, is a large hall, which rises in the form of a rotunda, and is open at the top, to give a free circulation to the air. A spacious estrade, or raised floor, covered with a carpet, and divided into compartments, goes around it, on which the bather leaves his cloaths. In the middle of the building is a jet d'eau, which spouts from a bason, and agreeably entertains the eye. When you are undressed, you tie a napkin round your loins, take a pair of sandals, and enter into a narrow passage, where you begin to be sensible of the heat. The door shuts to; and, at twenty paces, you open another, and go along a passage, at right angles with the first; here the heat increases; they who are afraid of suddenly exposing themselves to a stronger degree of it, stop in a marble hall, in the way to the Bath, properly so called.

The Bath is a spacious and vaulted apartment, paved, and lined with marble; around which there are four closets. The vapour, incessantly arising from a fountain and cistern of hot

water, mixes itself with the burning perfumes, and produces the most agreeable effect. Extended on a cloth, spread out, the head supported by a small cushion, they stretch themselves freely in every posture, whilst they are enveloped in a cloud of odoriferous vapours, which penetrates into every pore. After reposing there for some time, until there is a gentle moisture over the whole body, a servant comes, presses you gently, turns you over, and when the limbs are become supple and flexible, he makes all the joints crack, without any difficulty. He masses and seems to knead the flesh, without making you feel the least pain. This operation finished, he puts on a stuff glove, and rubs you a long time. During this operation, he detaches from the body of the patient, which is running with sweat, a sort of small *scales*, and removes the imperceptible impurities that stop the pores; the skin becomes soft and smooth, like satin. He then conducts you into a closet, pours the lather of perfumed soap upon your head, and retires. This closet is provided with a cistern and two cocks, which supply hot and cold water; here the bather washes himself. Soon after, the servant returns, with a depilatory po-

matum, which in an instant makes the hair fall off the places to which it is applied. Both men and women make general use of it in Egypt; it is composed of a mineral called rusma (I suppose an oxide of arsenic,) which is of a deep brown; the Egyptians burn it lightly, knead it with water, mixing with it half its quantity of slacked lime; this greyish paste, applied to the hair, makes it fall off, in two or three minutes, without giving the slightest pain. After being well washed and purified, you are wrapped up in hot linen, and follow the guide through the windings that lead to the outer apartment; this insensible transition from heat to cold, prevents one suffering any inconvenience from it. On arriving at the estrade, one finds a bed prepared, and, when lain down, a child comes to press every part of your body with his delicate fingers, in order to dry you thoroughly. The linen is changed a second time, and the child gently grates the callosity of the feet with pumice stone; he brings a pipe, and Mocha coffee.

Coming out of a stove surrounded by a hot and moist vapour, where the sweat gushed from

every limb, and transported into a spacious apartment, open to the external air, the breast dilates, and one breathes with voluptuousness. Perfectly massed, and, as it were, regenerated, one experiences an universal comfort. The blood circulates with freedom; and one feels as if disengaged from an enormous weight, together with a suppleness and lightness to which one has hitherto been a stranger. A lively sentiment of existence diffuses itself to the very extremities of the body; while it is lost in delicate sensations, the soul, sympathising with the delight, enjoys the most agreeable ideas. The imagination wandering over the universe, which it embellishes, sees, on every side, the most enchanting pictures, and every where the image of happiness. If life be nothing but the succession of our ideas, the rapidity with which they then recur to the memory, the vigour with which the mind runs over the extended chain of them, would induce a belief, that in the two hours of that delicious calm that succeeds the Bath, one has lived a number of years.

Such is the flowery description given of the Egyptian Baths, by Mr. Savary. We may natu-

rally suppose, that the ladies in Egypt are much attached to the use of them; their confined education preventing their having much intellectual pleasure, they are consequently much attached to those innocent pleasures of sense, which their habits, education, and religion, allow them to enjoy. The use of the Baths in Egypt exerts its influence on the health of the people, by early removing the causes of those complaints which would seriously afflict them without such preventatives: thus, by keeping the skin in a proper secreting state, they avoid a number of cutaneous diseases; as well as rheumatisms, catarrhs, pleurisies, and fevers.

I shall now give an account of a curious species of Vapour Bath, which was used by the Mexicans, when the Spaniards first invaded that country; and which is still in use, according to the account of the Abbé Clavigero. These Baths are built with raw bricks, and their form is similar to that of ovens for baking bread; but with this difference, that the pavement of the Bath is a little concave, and lower than the surface of the earth; whereas the surface of most ovens is

plain, or a little elevated for the accommodation of the baker. The greatest diameter of a Bath is about eight feet, and its greatest height six. The entrance, like the mouth of an oven, is wide enough to allow a man to creep easily in. In the place opposite to the entrance, there is a furnace of stone or raw bricks, with its mouth outwards, to receive the fire, and a hole above it to carry off the smoke. The part which unites the furnace to the Bath, and which is about two feet and a half square, is shut with a certain dry stone, of a porous texture. In the upper part of the vault there is an air-hole, like that to the furnace.

This is the usual structure of the Temazcalli, for so these Baths are termed by the Mexicans. When any person goes to bathe, he first lays down a mat, a pitcher of water, and a bunch of herbs, or leaves of maize. He then causes a fire to be made in the furnace, which is kept burning until the stones which join the Bath and furnace are quite hot. The person who is to use the Bath enters commonly naked, and generally accompanied, for the sake of convenience, or on account of infirmity, by one of his domestics. As soon

as he has entered, he shuts the entrance close, but leaves the air-hole at top for a little time open, to let out any smoke that may have been introduced through the chinks of the floor. When the Bath is clear of smoke, he likewise stops up the air-hole. He then throws water upon the hot stones, from which immediately arises a thick steam to the top of the Bath. While the sick person lies upon the mat, the assistant drives the vapour downwards, and gently beats the sick person, particularly on the ailing part, with the bunch of herbs, which is dipped for a little while in the water, which has then become warm. The sick person falls immediately into a soft and copious sweat, which is increased or diminished at pleasure, according as the case requires. When the desired evacuation is completed, the vapour is let off, the entrance is cleared, and the sick person clothes himself, or is transported on the mat to his chamber, as the entrance of the Bath is generally within some apartment of his habitation. This species of Bath is used by the natives for many disorders, particularly in fevers arising from costiveness. The Indian women always use it after childbirth, and also those persons who have

been stung or wounded by any poisonous animal. It is undoubtedly a powerful remedy where gross humours are to be carried off. The Temazcalli is so common, that in every place inhabited by the Indians there are many of them.

Nearly the same means are used by the inhabitants of North as of South America. The Indians use vapour Baths: according to the account given by the missionaries, their general remedy for all disorders, whether serious or trivial, is a sweat. For this purpose, they have in every town an oven, situated at some distance from the dwellings, built either of stakes and boards, covered with sods, or dug in the side of a hill, and heated with some red hot stones; into this the patient creeps naked, and the heat soon throws him into such a profuse sweat, that it falls from him in large drops. As soon as he finds himself too hot, he creeps out, and immediately plunges himself into the river, where he continues about half a minute, and retires again into the oven. Having performed this operation three times successively, he smokes his pipe with composure; and, in many cases, the cure is complete. In some places ovens are con-

structed large enough to receive several persons; some chuse to pour water now and then upon the heated stones, to increase the steam, and procure a more profuse sweat. Many Indians in health, make a practice of going into the oven about twice a week, to renew their strength and spirits. Some pretend, by this operation, to prepare themselves for a business which requires mature deliberation and artifice. Rheumatism and inflammatory fevers yield to this treatment among the American Indians: if the complaint is protracted, they use much mummery to amuse the patient's mind, and make him persevere until the cure is affected. In the history of many uncivilized nations, this rude application of vapour Baths in the cure of diseases is to be traced. The inhabitants of the South Sea Islands dig a hole in the sand, and fill it with red hot stones and sand; and when the latter has become quite hot, they cover the patient up to his neck in it. When he is in a violent perspiration, they take him out, and plunge him into the sea; after which he lies down, well covered, and drinks abundance of hot liquors to encourage perspiration; and often rises quite cured of a feverish attack. This, likewise, is the method which they chiefly trust to, in the cure of Lues Venerea.

CHAPTER IV.

ON THE

FUNCTIONS OF THE SKIN:

Importance of applying heat and cold to the surface of the body, in Rheumatism and Gout.

ON cutaneous diseases the vapour Bath exerts extensive influence. It may therefore be necessary to take a cursory view of that most important and extended organ, the skin. This integument, which covers the whole body, is formed by the minute terminations of all the superficial and exhalant arteries, nerves, veins, and absorbents of the system; this is covered by the colouring, or blushing membrane, and defended from the too rude impressions of external agents by the scarf-skin. By this structure we see, that the skin both secretes and absorbs: poisons and antidotes may be infused into the system, as well as healthy and morbific matter secreted from it. But the

principal use of the skin is to carry off from the system the redundant heat and moisture, by the discharge of what is termed sensible and insensible perspiration ; and on the fitness of this organ to perform the duties of its office, in a very great degree depends the state of the health of the individual : if it acts in excess,. great debility of the whole system takes place ; if it be deficient, other organs are distressed by doing its work : thus it frequently happens, that defluxions on the lungs are the consequence of imperfect perspiration. But not only the lungs may be oppressed, but all the other secreting organs may suffer from its deficiency ; the equal balance of perfect health may long be broken, before absolute disease takes place : for nature is ever ready to assist in restoring equal action ; but if necessary attention is not paid to keep the skin in a perfect and healthy state, obstinate chronic diseases must be the consequence, and they will assume an inveterate character according as they have been allowed to remain, and destroy the due equilibrium of the other functions ; for, as all the secreting membranes sympathize with the surface, it will be necessary to preserve it in a healthy state, with a

view of relieving the morbid secretions of those membranes, whether they shew themselves as gout, rheumatism, leprosy, or indurated affections of the legs, termed scorbutic. Should the distress have gone to the extent of destroying the structure, remedy will be doubtful: yet I have frequently seen the breast so oppressed, as to have long secreted mucus, tinged with blood, and carrying a purulent appearance, relieved, and ultimately cured, by paying proper attention to the skin, and making it perform its duty. Nor is this relief confined to the breast alone: determinations to the bowels are also among the complaints in which I have found the vapour Bath an auxiliary of the greatest use. An irritable state of the intestines, with long continued diarrhœa, which had resisted the ordinary means of cure, under the direction of some of the ablest medical men, was ultimately overcome by the assistance of the vapour Bath; which, by exciting the action of the cutaneous arteries of the whole system, and causing a greater flow of blood to the surface of the body, ending in secretion, relieved the irritable state of the intestines, (vide Case B.) On this principle much of the practice of medi-

cine, depends. Counter irritation is frequently practised with the best effects; as we daily see in blistering for inflammation in any of the internal parts, as of the head, breast, or abdomen. How far the secretion of one organ can be carried, to make up for the deficiency of another, is a point not yet perfectly ascertained in practice; future observation may determine this point. Of the fact the most common observer must be assured. In winter, the kidnies secrete for the skin; in summer, the skin relieves the kidnies;—but how far, or how long, the one may work for the other, is not duly appretiated by any medical observer.

In all cases of effusion in any part of the body, the increasing of the secretions, either by the bowels or the kidneys, is had recourse to; and in fevers, the practice for many centuries was, to excite sweating by sudorifics; but the manner of producing it by warm drinks, and increased bed-cloaths, was attended by so many inconveniences, that much ingenuity has been exercised, to find other means to render this secretion less necessary; but the vapour Bath enables us to excite this secretion, without debilitating the stomach, or

confining the patient unnecessarily to his bed: so that by this means, another extensive remedial power is given to the faculty. Mercury, which relieves more diseased actions than any single medicine, acts on the same principle, *i. e.* by increasing all the secretions. Probably one half of the quantity of Calomel would cure the liver complaints of the East and West Indies, was vapour Bathing to be combined with the use of that noble remedy. The Neapolitan physicians confide much in the use of warm bathing, in the treatment of Lues; Boerhaave was of the same opinion. The experience which the yellow fever has given us, shews the quantity of Calomel a subject may take, compatible with life: yet there are few practitioners, who would not be desirous of producing the same beneficial effects, with less harm to the constitution. The tendency the Bath has to put into action a series of torpid parts, is nearly as great as that of Mercury. For what part of the body is there that does not sympathize with the state of the skin? Is there an inflammation of any extent, on any part of the body, with which the skin does not instantaneously consent? Of the extensive use of the Bath, as an auxiliary,

in causing a counter irritation, and of the ability of the skin to bear it, I am well assured from much experience.

From the moist cold atmosphere which our insular situation exposes us to, rheumatism is one of the most frequent, difficult, and tedious complaints, that the faculty have to combat. When the healthy action of a subject is destroyed by rheumatism, a train of symptoms takes place, varying in each particular subject, according to the peculiarities of his constitution : these will require the attention of the medical attendant intrusted with conducting the disease in this stage. Should sudorifics be deemed eligible, there is none can compare with the vapour Bath, in point of efficacy, and which the system can bear with so little distress to itself; for there is no necessity to debilitate the stomach by large draughts of diluting liquids, to keep up the perspiration ; nor is there the danger in checking the sweating excited by these means, as by the tedious continuance of sweating in bed : for when the patient quits the Bath, and has the skin well dried and rubbed, the exposure to dry cool air, is both safe and

pleasant. But it is not in this stage of the disease that I can speak with certainty of the use of the Bath: I am only forming an opinion from analogy, and from the general power it exerts on the surface of the body. It is in the shape of chronic rheumatism that I have been accustomed to attack it, when deep seated in the larger joints; as in lumbago, sciatica, and the knee joint. In severe cases of this nature, which had withstood all the efforts of ordinary practice, I have, with this addition, steadily persevered in, been enabled to give relief, and found that this enemy to human happiness might be banished, when the unfortunate sufferer had expected that his foe never would be made to let go his hold. I am happy to find my experience confirmed by so able a practitioner as Dr. Bardsley, of Manchester, who says, "I consider both the warm and tepid Bath as remedies of inferior value, when compared with the topical, and sometimes general use of hot water, in the form of vapour. Whenever the joints were found so rigid as to be nearly immoveable, and the pain, upon motion, exquisitely severe; or when the muscles had become contracted, and almost paralytic; and, indeed, in every protracted case

of the disease in the hip-joint, lumbago, or sciatica; the vapour of hot water, locally and properly applied, afforded (especially in conjunction with other means) a safe and often successful remedy." After the removal of these fixed pains, by the use of the vapour Bath, I have found the system placed in a better state of defence against taking on the morbid action of rheumatism in other joints, by the use of cold bathing intervening, whilst under the course of vapour bathing. Nothing appears to restore strength so rapidly as cold bathing, to patients who have suffered from either acute or chronic rheumatism.

Having said thus much on the affection of the sheaths of tendons, termed rheumatism, we will next treat of the affection of the joints, termed gout. Gouty inflammation, and the inflammation of ligamentous or tendinous parts, from violence by sprain, have lately been supposed to be of the same nature; and the same means have been recommended for their cure, viz. the application of cold water, until the inflammation disappears. But there is certainly a great difference between the inflammation excited by external

violence, in the joint of a healthy man, and that appearance of inflammation, upon the cessation of the accustomed train of actions, preceded by torpor and rigors, in the joints of a man, who, for a series of years, has indulged in daily excitement.

In the year 1795, a friend of mine, at Newcastle-upon-Tyne, of a healthy constitution, aged about 30, had, from the severity of the winter, chilblains, which swelled with heat and inflammation; at the same time, he had a tenderness of the joints of the great toes, with some redness. He was induced to immerse his feet in cold water. Dr. Ramsay, his medical friend, cautioned him in its use, and made the following remarks on the experiment:—Heat of the room, 60; heat of the subject (thermometer in the palm of the hand), 94; pulse, on immersion, 72; immediately on plunging the feet into the water (which was 40), the mercury fell ten degrees, viz. to 84:—the pulse also as rapidly sunk 12 strokes, viz. to 60; the heat and the pulse gradually arose a little in three minutes; but a pain ensuing at the lower part of the sternum induced an end to be put to the experiment, in about five minutes

from the first immersion. The pain was believed to be a perfect translation of gouty action: accordingly, a glass or two of generous wine was given, which moderated the pain. The inflammation of the feet was relieved; but evidently at the expence of diseased action, or rather cessation of action, forming torpor in another part: it was above a month before this pain left the subject. Had the pain of the sternum been followed by the application of cold water, it probably might have left that part, and a congestion taken place in the head, causing apoplexy: or this might have been the first effect, had the subject been debilitated by frequent attacks of gout; though I am far from saying, that in certain stages of debility from the gout, applications general or local, of cold water, may not be of service; and we are much obliged to Dr. Kinglake, for his publication on the subject, as it must elicit many facts, which otherwise would have been lost to the profession. In the end, the laws of action of cold on the human system will be more easily understood, and more usefully applied than heretofore; but from the above experiment we see, that great caution is required in the partial application of cold: for gout is cer-

tainly a disease of the system, and not merely a local disease, as is the sprain of a ligament. The process of generating heat, in the experiment just related, was more affected than in some of the cases related by Dr. Currie, in which the subject was immersed in cold water up to the neck, and remained in that situation for a quarter of an hour. A remarkable coincidence appears between the action of the heart, and the rise and fall of the thermometer: twelve strokes less in a minute the heart acted, and ten degrees fell the thermometer; as the circulation rose, so did the heat. This experiment was better calculated to determine the relative effect between the circulation and the evolution of heat, than Dr. Currie's: for when the subject is totally immersed, the convulsions arising from the general shock, are such as to prevent minute attention to the action of the arteries. There can be little doubt, but the pabulum of heat is received into the system by the lungs in respiration; but its evolution appears to depend on the rapidity with which the different series of vessels perform their actions. The sympathy of parts with the whole, forms one of the most difficult and important points, to be attended to in the appli-

cation of heat and cold : for as they rank amongst our most powerful remedies, so they resemble them in their deleterious effects, if improperly applied. Thus a person accustomed to immerse and wash the feet every day in cold water, would be very differently affected from one who was in the habit of washing his feet only once a week, and even then in warm water.

That the parts in some states of gout, and those affected in sprain, are similar, there can be no doubt ; that a sprain, in a healthy subject, may be relieved, and the inflammation moderated, by the application of local cold, is also an acknowledged fact ; but do we not find also, that certain stages of ligamentous inflammation are more quickly relieved by warm fomentations, and that the use of these render the parts fitter to be acted upon by the cold applications ? But surely the case is very different, when, from a diurnal excitement of vinous or spirituous libations, the stomach has been affected with all the series of dyspeptic symptoms, attended with defective secretion of the liver ; exciting a morbid sympathy, from which an alternation of inflammatory action

takes place, between the ligamentous articulations of the joints, and that viscus.* In such a case the inflammation of the joint cannot be looked upon as the disease, but as the effect; and the first indication of cure must be to place the system in the best posture of defence, against this morbid sympathy.—I perfectly agree with Dr. Kinglake, that it is highly proper to prevent the disorganising effects, as well as to mitigate the pain of protracted tendinous or ligamentous inflammation, which, in certain stages may be assisted by the topical application of cold, and also by the application of heat, as well as the general morbid sympathy may be prevented by the application of heat and cold, alternately applied to the whole body. But supposing the most distressing part of gouty affections to consist in increased temperature, does any process reduce temperature so much as perspiration? therefore its utility, as well

* In general when the membranes and ligaments of the joints cease to act in unison with the excitement of the stomach, the balance of healthy sympathy is so far lost, that in putting an end to the inflammatory action of one joint, we frequently see others assume the same action; but this metastasis is never seen from sprain when there is no previous morbid sympathy in the system: in this consists the great difference between sprain and gout; the one is local, the other a disease of the whole system.

as its soothing effects, are strongly indicated in the treatment of gout: more particularly, when excited by the means recommended, the general heat will be carried off, and the part left in that state, when cold may be applied with the greatest effect.

There is a point of debility and morbid feeling after the cessation of a fit of the gout, at which the cold Bath has as good an effect as in rheumatism. One of the greatest martyrs to the disease that I have known was the late Major Elves, of Newcastle-upon-Tyne, who, after passing a tedious winter with constant inflammation in one joint or another, removed to Tynemouth in a great state of weakness; as the stomach and viscera appeared to perform their functions well, he was advised to bathe in the sea; the great and immediate relief he found from his cold immersion was as marked as any case of rheumatism I had witnessed. From the benefit arising from the above case, I have with much advantage ordered others to bathe, on the termination of a paroxysm, and in the intervals; I have likewise used the vapour bath to induce that state of feeling on the

surface which is so immediately benefited by the application of cold. This seems consonant to the effects we perceive in inflammations of other parts. The inflammation of the eye sometimes yields to cold applications; and in others resists them, when the application of hot fomentations may be used with great advantage. In some inflammations of the eye, I have found the alternate use of hot and cold applications effect the cessation of inflammation, when neither of them, singly, appeared capable of putting an end to the diseased action. On this principle, if our chief view in gout is to relieve the tendinous and ligamentous inflammation of the joints, which undoubtedly is an object of the first importance, there are no means by which this object is more likely to be attained, than by producing a gentle perspiration, and relieving the engorgement of the inflamed parts; and at the same time, the state of feeling, necessary to the salutary application of cold, is thus produced. If we were to admit that gouty inflammation consisted principally in increased temperature, it would be highly rational to attempt its relief by exciting perspiration, as no process cools the body so much as sweating; particularly

when that process is induced without stomachic stimulants, and checked previously to its inducing debility. The history of fever and inflammation, from the earliest periods to the present, shews us the great usefulness of sweating, in resolving these morbid states: the difficulty of exciting this discharge has been the only reason of discontinuing the practice. Thus we find, that increased temperature, inducing secretion, relieves inflammatory action, as well as the application of positive cold. We ought, therefore, not to reject, from hypothesis, that which the experience of ages has found useful, in remedying diseases of such general occurrence as fever and inflammations.

CHAPTER V.

ON THE EFFECTS OF HEAT UPON THE LIVING SYSTEM.

Advantages of applying heat and moisture to the body in an aeriform state, in preference to a denser medium---on the absorbing power of the skin in a Bath---on the absorption by the lungs---on applying vapour to the surface of the lungs---analogy of vegetable with animal life.

IT is a subject attended with some difficulty, to determine the effects of heat upon the living system. The term itself is very indefinite, and the ideas it conveys to the mind are always relative to the individual who uses it: it will therefore be necessary to fix some standard, by which we may understand one another when we speak of heat. To illustrate its effects more clearly, it will be well to contrast them with the effects of

cold. Until late years, various have been the opinions entertained on the effects of cold: some have regarded it, and regard it still, as a stimulus; but a Currie, a Kinglake, and a Stock, have thrown considerable light on the subject; particularly the last, who has fairly met the question, and shewn that the effects of cold are always sedative—paleness and contraction of the skin—-diminished action of the heart and arteries—and, if the cold be continued long, and go considerably below the freezing point, death is the consequence. In cold countries, partial death is frequently observed: noses, ears and toes, are often lost from the effects of cold in Poland, Russia, and America.*

It will be necesary to fix a medium for our guide in speaking of heat and cold; we will therefore name 60 degrees of Fahrenheit's Thermometer, as the mean heat, in which all the animal functions are performed in due order. If this temperature be suddenly diminished, all the series of actions depending upon the degree of 60, is diminished. A small degree of cold, in our

* For some of these effects, vide my first Essay on Burns, page 104, et sequ.

autumnal months, renders torpid the ant and the fly: as winter advances, the dormouse and the marmot become so torpid, that their heart ceases to beat for months. Some serpents in winter are frozen so hard and brittle as to break like sticks: yet life in them is only suspended; for the gradual return of vernal heat to their hiding places, restores them to feeling and activity. In still colder latitudes, more perfect animals yield to the influence of the benumbing effects of the abstraction of heat: the bears of the polar regions become torpid for months. It does not appear, from the relations of persons who have had their functions nearly suspended by cold, that their sensations are so unpleasant as might be expected: a drowsiness seems to spread over them; to which, if they yield, a short period puts an end to feeling, and animation is thus suspended, which, from a want of proper means of resuscitation, too frequently ends in death. Yet there is a period, probably, when the whole system might be restored from this state—as well as a part so affected restored to the whole. There can be no doubt, if we regard the above phænomena, of placing cold in all cases at the head of sedative remedies: its action com-

mences with a diminution of power; and if increased, finishes by the cessation of all motion. Thus, if cold be regarded in all instances as a sedative,—upon considering the phænomena of heat, we must, to be consistent, draw the opposite conclusion, viz. —that heat is in all cases a stimulus. Let us therefore examine, how far we ought to draw this inference:—1st, On the application of heat, the skin becomes red, and distended—2dly, The action of the heart and arteries is much increased —3dly, All the vital powers are performed with greater energy; and should the stimulus be carried on to the greatest extent, the excitability would be exhausted, and death be the consequence. Our power of existence in temperatures above 60 degrees, is very extensive; Messrs. Blagdon, Solander, and Banks, existed in a temperature of 260 of Fahrenheit's thermometer. Glass-makers, and many other manufacturers, are exposed to great heats: in some parts of France, it was a custom for either a man or woman to go into an oven, heated for baking, and arrange the bread. The effect of this dry heat is an increased action of the heart and arteries, terminating in profuse perspiration.

On the effects of moist heat I will detail my own experience. The following experiment was noted by my friend, Doctor Ramsay, of Newcastle, in the year 1798:—The temperature of the room, in which a vapour Bath was situated, was 63 degrees; my circulation, on going into the Bath, was 70 beats in a minute; the heat of the vapour Bath never exceeded 96. After I had been in the Bath for a few minutes, my pulse began to rise; and when I had been in ten minutes, it beat 100. At this time, the perspiration flowing, the pulse ceased to rise; in five minutes more I quitted the Bath. From this experiment we find, that the action of the heart was increased 30 strokes in a minute; that the blood was determined to the surface; and this determination resolved itself by a flow of perspiration. From this fact, we see the utility of this application, in all cases of internal inflammation: it draws a great quantity of blood to the surface, and relieves the internal parts by the secretion of the skin, which is the mode nature frequently takes to resolve inflammations, as well as fevers. In short, the whole series of medicines used for the cure of fevers, and inflammations,—such as Dr. James's

fever powder—all other antimonials and emetics —seem to exert their chief beneficial effects in proportion to their exciting a discharge by the skin. The application of heat and moisture, through the medium of warm steam, impregnated with the essential oil, and aroma of some of our odoriferous plants, produces other effects on the system than merely exciting perspiration : local torpor is overcome, and an equal and due action is restored to the surface : a highly agreeable state of feeling is produced, which renders the influence of cool air safe and desirable ; when previous to the application of the warm vapour, it produced slight chills, or goose skin, in different parts of the body ; the restoration of this healthy state of feeling, shews the great power, the vapour Bath exerts upon the nervous system, and of changing the torpor, or morbid state of feeling, to that uniform and healthy standard.

Were we to pursue the influence of the vapour Bath in all the classes of fevers of nosological writers, to which its use would be applicable, it would lead to a much larger work than I at present intend, and more calculated for a different

class of readers : I rather wish to confine myself to note its powers, and leave the profession at large to use it in cases in which they may judge it to be serviceable.—It may be said, that the vapour Bath is only the application of heat and moisture to a part, or the whole of the surface of the body; and that the natural warm springs, or a warm domestic Bath, of equal temperature, would produce the same effect. Of the efficacy of each of these means I am fully aware: nor do I wish to depreciate their utility; but I must, in forming an estimate, give the result of my experience. In cases of chronic rheumatism, where there is much debility, with deep-seated pain, the warm Bath frequently renders the patient hot and restless; and seldom or never relieves, unless it induces sweat. Now the advantage of the vapour Bath is, that perspiration takes place at a much lower temperature in the one than in the other: the vapour Bath needs not be heated above 96 degrees, to produce a salutary perspiration; whereas a warm water Bath seldom produces this discharge at a lower temperature than 100 degrees,—and from that it is used up to 112, in some of the hot springs at Bath. Besides this

increased heat applied to the skin, when the exhalants are ready to yield their contents, the surrounding medium presses upon the cuticle, and, in some measure, prevents the flow of perspiration which it had caused to come to the surface. On the contrary, in the vapour Bath, the heat being applied to the skin in an aeriform state, unites with the insensible perspiration, as it arises, by the exhalants—condenses upon the surface, in sensible perspiration, and drops from the body by its own weight—meeting with no resistance from the elastic vapour which is in the Bath. Thus we find, that perspiration is more effectually induced by the vapour Bath, than by the warm Bath,* at a lower degree of tempera-

* The different power of vapour and warm water, is strongly illustrated by the following case, communicated by Doctor Curzio, of Naples, to the Abbé Nollet, which is inserted in the Journal des Savans, du mois de Decembre, 1755:—A young girl, not arrived at puberty, was affected with a hardness and stiffness of the skin; which first began in the neck, then spread over the face, and afterwards gradually over the whole body; even the lips and tongue became stiff. The skin did not lose the sense of feeling, as sometimes happens in the thickening and hardening of the integuments: for it was sensible to a pressure of the nail, or the puncture of a pin, either of which caused great pain. What was singular in this case was, that the secretion of urine exceeded considerably the quantity of drink taken: this phænomenon the Doctor attributes to the total defect of transpiration by the skin. The means they

ture; and if perspiration is not induced, in a variety of cases, all the symptoms are aggravated. This, consequently, is no small advantage of the one over the other. As a detersive, or cleanser of the skin, it acts more powerfully, and pleasantly than the warm Bath. The portions of cuticle, which, in some diseases of the skin, adhere and form scales, and sometimes excite a humid discharge, are more easily and perfectly thrown off

used to restore the functions of the surface to their proper action, was the warm Bath: the patient could not bear its use longer than half an hour at a time; but instead of being of service, the skin became harder, and more contracted. After persevering for some time, the symptoms increased, which, the Doctor supposed, arose from the pressure of the water on the skin, which prevented the effect he wished to produce. To obviate this, he was induced to order the use of the vapour Bath, which, by conveying the heat and moisture in a gaseous state, avoided the pressure of the water upon the pores of the skin. When it had been used about half a dozen times, a gentle moisture first appeared upon the breast, and under the arms. In continuing its use, the skin gradually became less hard and contracted. By persevering in this plan, with alterative doses of mercury, in the space of five months, this patient was perfectly cured.

Another striking case of the superiority of vapour bathing, to that of warm water, is given by Sparrmann in his account of the Cape of Good Hope. He was confined by the gout in his feet, which he relieved by a partial vapour Bath; but upon immersing his feet in warm water, he found no benefit. He does not enter into any reasoning upon the subject—he only gives the fact. The reason will be seen in the former case.

by the use of the vapour than by the warm Bath. Thus, in all diseases of the skin,—from the slightest shade of diseased secretion, to the most confirmed leprosy,—I have found the vapour Bath of the greatest utility.—In addition to this, vapour, by means of a proper apparatus, is much more easily applied to any particular part of the body.

But I have yet to mention one advantage, which the vapour Bath possesses over the warm Bath, and one of the greatest importance, viz. its application to the whole internal surface of the chest—a surface, probably, if every air vessel was spread out, and formed a plane,—much more than equal in extent to the whole surface of the body.* Much has been written upon the absorbing powers of the skin: all the fathers in medicine, from Hippocrates to Boerhaave and Haller, have calculated the great absorbing powers of the skin, particularly in the use of Baths. Reckoning upon this as a fact, various substances have been contrived with a view of giving nourishment by the skin: Baths of milk and broth have been ad-

* Some calculate this surface at ten times that of the body.

ministered, with a view of supporting patients who were, by diseases in the throat, prevented from swallowing.

A very interesting case is given by that elegant medical author, the late Dr. James Currie, of a Mr. M——, who died of inanition—(see Medical Reports of cold Water).—It appears from that case, that the whole practice and conclusions, drawn from the absorbing power of the skin, have been formed upon false data, and, when fairly met, have all vanished "like the baseless fabric of a vision." Mr. Seguin having observed, in his researches upon perspiration, that this supposed absorbing function of the skin did not answer to the phænomena which he observed, was induced to interrogate nature by experiment, and not to rest satisfied with the assertions of various authors, who assure us, that the body becomes heavier in the Bath, and that a moist atmosphere produces the same effect—(vide Haller).—It will not be necessary to detail all Mr. Seguin's experiments, which he made with a view of ascertaining this important fact; but some of the conclusions are of sufficient importance to be noted:—1st, In no

case do the absorbents of the skin take up either water or air, or any of the substances dissolved in them. 2dly, The cuticle, which forms a complete covering for the mouths of the cutaneous absorbents, totally prevents them from performing this function, unless the substance is introduced under this coat,—as happens in the case of mercurial (and probably with opiate and other) frictions,—which forces the different substances under the scales of the cuticle, so as to come in contact with the mouths of the absorbents. 3dly, No dry or caustic substance is absorbed, until it has destroyed the cuticle, or natural covering and defence of the absorbents. The experiments he made to arrive at these conclusions, are well conducted and curious; and appear to warrant the conclusions he has drawn from them.

These are still further corroborated by some experiments, on the same subject, by Dr. Baptiste Clement Rousseau, of the island of Hispaniola. The substances he employed were spirit of turpentine, musk, garlic and camphor: these were chosen as substances easily detected in the system by absorption. He details the experiments made

with spirit of turpentine only: all those made with the other substances, corresponding very exactly with them. To ascertain the effects of spirit of turpentine, when absorbed, he took a few drops, diluted with sugar and water; in a little time after, his urine had a strong smell of violets: this effect always follows the introduction of turpentine into the system, by whatever means it may have been applied to the absorbents. More strongly to elucidate this, he took some in the form of glyster: in about an hour afterwards, both his urine and breath were strongly impregnated with the odour of violets. He inhaled strongly, from a narrow-necked bottle, a dozen times; then walked out into the air; and in an hour's time his urine had the strong violet odour. He poured some spirit of turpentine upon a table, in a close room, in which he walked about for half an hour; at the end of which time, his urine discovered the effect of pulmonary absorption. These experiments shew us the activity of the pulmonary absorbents: it therefore required great care and address, in making experiments upon the absorbing powers of the skin, to avoid being deceived by the absorbing power of the lungs.

He immersed his arm in spirit of turpentine for two hours, luting the vessel containing it to the skin, so that no vapour could escape. No effect was produced upon his urine or respiration; though, in the course of the experiment, the fingers became painful and inflamed, from the irritation of the spirit of turpentine. He provided a long pipe, which communicated with the external air; he breathed through this, cautiously excluding all communication with the air of the room in which he sat. He then poured out spirit of turpentine upon the table, as in a former experiment; and, stripping off his cloaths, exposed the whole of his body to the emanation of its fumes for two hours; —but no effect was produced on the urine, either then or the whole day afterwards. He smeared his body all over with spirit of turpentine, guarding against inhaling the vapour by the lungs, by breathing the external air through a tube, as already described: he continued this for some time. His pulse was quickened, and the skin irritated; but no effect was produced upon the urine." This experiment was frequently repeated, and always with the same results, whether the substance employed were turpentine, musk, garlic, or camphor.

—These results led Dr. Rousseau to doubt whether mercury rubbed on the surface affected the system in any other way, than merely by producing a mercurial vapour, which was afterwards absorbed by the lungs, and thus affected the system.

Mr. Seguin's hypothesis, of the ointment being forced by the friction under the layers of the cuticle, and thus applied to the mouths of the external absorbents, seems more probable than that of Dr. Rousseau : otherwise, a patient under the use of a mercurial friction, would be more likely to affect those, who came within his atmosphere, than to be affected himself; but every day's experience proves the contrary of this. The experiments of Mr. Seguin, who bathed in strong solutions of mercurial and antimonial salts, as well as those of Dr. Rousseau and Dr. Currie, tend to prove, that the skin, in a *healthy* state of the cuticle, does not absorb ; and, consequently, all calculations of the quantity of fluid absorbed by the skin, in Baths, have been from false data. At the same time, Dr. Rousseau's experiments tend to shew the avidity with which the lungs devour

that which is presented to them. The absorbing power of the lungs is a ready road into the system, both for disease, and for the means of life and health. The Chinese inoculate their children for the small-pox, by putting some of the powdered crusts into a little musked cotton, which they put up the nostrils; and then they make the child breathe through this contaminated medium: by which means it inhales the seeds of disease into its blood, and becomes infected with small-pox.

As the air we breathe is a compound substance, capable of infinite combinations, it was, some years since, thought worth the attempt to alter its composition, so as to produce a different effect upon the system. A considerable advance in that species of medicine was made by the writings of Dr. Beddoes, and the mechanical contrivances of Mr. Watt. Undoubtedly the sanguine expectations of some were disappointed in this practice, as they probably expected a panacea; but that it possessed considerable powers, as an auxiliary, in removing disease, I have myself experienced;*

* The case of Captain Pelmsley, communicated by me to Dr. Beddoes, is a striking proof of the absorbing power of the lungs:—

and have no doubt that, under proper management, it may be of considerable importance.

The late Dr. Darwin contrived a dusting box, for the application of what powders he thought might be salutary for the healing of ulcers on the surface of the lungs. But the mode of applying vapours from medicinal herbs to the whole surface of the lungs, has a variety of advantages over Dr. Darwin's: there are few substances, either mineral or vegetable, which may not be dissolved, and thus applied in the state of vapour to the lungs. As the cuticle, it appears, does not absorb, the quality of the vapour should be adapted for the lungs to act upon: for with whatever substance it is otherwise impregnated, it will still act as heat and moisture upon the surface of the cuticle.

Although the experiments, above related, would seem to prove that the skin has no absorbing power, yet there are other facts related, which should make us pause before we give implicit faith to this opinion. A very ingenious work, by Sir Peter Lalonette, on the cure of the venereal dis-

Vide Considerations on the Medicinal Use of Factitious Airs, by T. Beddoes, M. D.

ease, by immersing the body in mercurial vapour, renders this doubtful. The number of cases related as cured by this method, attested by a number of the first medical and surgical charaeters, can leave no doubt on the mind of their authenticity : we must therefore suppose, that in *certain* circumstances, some mineral vapours may be received by the cuticular absorbents ; but should there not be cuticular absorption, of this we are certain, that heat and moisture produee a different effect, according to the medium by which they are communicated. The nervous sensibility of the skin being much increased by the applieations of vapour, is liable to be effected by the substances it may hold in solution, and to be agreeably or disagreeably impressed, aceording to the nature of the substance so dissolved and applied.

In addition to the action produced on the heart and arteries, and the subsequent seeretion upon the surface, the soothing effect of the vapour Bath, in relieving pain, and removing morbid sympathy, is of the most extensive use, in all complaints aceompanied with nervous irritation. That both dry and moist substances may be ab-

sorbed by the lungs, is a fact which appears well established. We have an extensive surface to act upon, which is the seat of one of the most fatal complaints of our Island: I need here scarcely name consumption. The recollection of this fact may lead to measures in practice which may be of infinite benefit to those attacked with that dreadful and increasing malady—I am sorry to say increasing; but it is a truth, in which many medical men I have conversed with, agree with me. The ravages of the scrophula, which formerly affected some of the less important glands of the system, and after disfiguring the subject, were overcome by the exercise and labour of a country life, or the equally salutary employment of seafaring men, now attacks the puny progeny of enervated citizens, in more vital parts, and at a more early period: the glands of the mesentery are frequently obstructed, and the children die of atrophy—others of consumption. Having had the opportunity of witnessing the practice of several public institutions, and of practising in them myself for many years, I have not hastily formed this opinion. In the case which I shall relate, (vide case A.) it will be seen, that the pro-

cess of growth had been considerably effected by a long continuance in the too cold medium of the atmosphere of England, in the system of a West-Indian. That there is a considerable analogy between the growing or unfolding of the animal frame, from birth to maturity, and vegetation, there can be no doubt: it has been noticed by most naturalists. The absorbents from the surface of the intestines, very much resemble the roots of plants; and the glandular secretions are in a great measure analogous to the secretions of vegetables.

As temperature exercises the greatest influence upon the vegetable world, so does it influence the more perfect organization of animal life. Animals that have been starved, by either cold or hunger, in their growing state, never recover it: this is well known to our breeders of race horses, who take special care that the young brood have both plenty of good food and shelter. The unfolding of the human system, to its utmost attainable point of perfection, requires much attention, and may be most materially assisted by the artificial application of heat and cold: it is not necessary to give plenty of good food merely; but the

system of the individual must be in a proper state to unfold its powers, and render its effects apparent. In a variety of diseases, and those of the most alarming nature, the appetite is great, nay even ravenous; but neither health nor strength result from it. In children, this is the most apparent, when the glands of the mesentery become thickened and diseased: the more food given in such cases, the worse; as it oppresses without nourishing the system: until these obstructions are removed, no healthy appearance can take place; gentle action upon the bowels, by saline stimulants, and exciting the surface to healthy action, by warm bathing, is most likely to give relief. Should there be much morbid sensibility in the system, the alternation of the cold with the warm Bath will lessen that effect, and restore equal action.

The analogy of plants and animals is interesting, and might be pursued to a considerable length. Warmth and moisture contribute to the formation of large and succulent vegetables; the animals which feed on these productions are larger than those which inhabit colder countries,

where the plants are less nutritive, from their being smaller, and their fibres more rigid. Some plants, as well as animals, are amphibious—as the rush and the frog; others are parasites, and live on the juices they extract from different subjects to which they adhere. Nourishment is afforded by most trees to certain mosses and fungous plants: the mistletoe feeds on the oak, but more frequently on the apple; and every animal is fed upon by smaller kinds. Plants and animals are so nearly allied, that their growth and nourishment are effected by similar instruments—nay, even some animal productions are of a vegetable nature: such as the hair, the nails, the beaks, and horns; as appears from the manner in which they grow and are reproduced.—As the effects of heat and moisture are so great on vegetable structure, so are they likewise on the unfolding of the animal frame: consequently, the aid that may be derived from the modification of temperature in the diseases of childhood, is of the first importance. In all cases of enlargement of the bones, thickening of the ligaments and membranes of the joints, with contractions or stiffness of the articulations of the bones, the vapour Bath is of great use; as well as

in the *engorgement* and hardening of the glands; Dr. Marcard recommends it in such cases. If it assists proper growth, it is equally of use in the decadence or collapse of the system: by keeping up a greater degree of sensibility on the surface of the skin, the effects of age are retarded, and the latter periods of life rendered more comfortable. Dr. Franklin received much benefit from warm bathing; he used it with the above intention of relieving the infirmities of age: it gave him ease in the violent and afflicting disease of the stone in the bladder. It answered the intention for which he used it, as he died at an advanced period of life, having for many years been in the constant habit of warm bathing.

CHAPTER VI.

ON THE MOST PROPER TIME OF USING THE VAPOUR BATH.

THE time of using the vapour Bath will depend upon the complaint it is intended to relieve, and the purpose for which it is designed. The advantage of this species of Bath is, that it may be always ready, and used at any time. When employed as an alterative, the morning is the best time, either before breakfast, or, in more delicate habits, between breakfast and dinner. The benefit of this is, that as the Bath is to produce an equal and general distribution of heat and action on the surface, ending in gentle perspiration, or carried to any degree of that discharge which may be thought necessary, it is better to dry the skin, and put an end to that process, than to go to bed and encourage its continuance, which might be carried on to produce debility. As there is no danger from cold, after the skin is properly dried and

rubbed, it is more agreeable to use the Bath in the morning: the cool air is truly grateful after this operation, and perfectly safe. This mode is in general to be recommended: but, in cases in which it might be necessary to use it more frequently, the discretion of the prescriber must be attended to, both in that, as well as to the time of using it, the time of continuing in the Bath, and the degree of temperature necessary. In general, a quarter of an hour, or twenty minutes is a sufficient time to remain in the Bath. The temperature may at pleasure be varied from 82 degrees to 114: in all cases this scale appears sufficiently extensive to insure the beneficial effects to be expected from the use of a tepid or hot Bath. When applied locally, to the foot, knee, hand, or elbow, it may be continued longer, or when applied generally at the low degree of 82, which is the temperature of the Buxton spring. (I only speak of the power of applying it at this low temperature; not that I expect much advantage in using it below the heat of the body.)—By varying the degree from 82 to the scale of the hot springs in Bath, the benefits arising from those springs may be obtained: retaining, besides, its peculiar

advantages, such as the power of applying it to the surface of the lungs, and exciting uniform action on the skin, without impeding the natural solution of that excitement in a gentle moist secretion, which is frequently the case, after the use of warm bathing—when, instead of soothing effects, we find the patient hot and restless, to the great disappointment both of patient and physician. The avoiding of this difficulty, and putting the skin in perfect harmony and good humour (as John Hunter emphatically used to term it), is a superiority which I have found the vapour Bath to possess, in an eminent degree, above all others. In cases where it is used for complaints on the lungs, the morning will also be the most proper time, as an exposure to the night air will be avoided—which is never salutary to invalids—but, in complaints of the chest, particularly pernicious.

Much apprehension is in general expressed, for fear of catching cold after the use of warm bathing, when the pores are all open. That this fear is unnecessary, the custom of the Russians, already detailed, fully proves to us. The fact is,

we are less liable to partial torpor, or cold, in any part, after warm bathing, than at any other time; it being understood that the skin is to be perfectly dried—when it ceases to be a conductor of heat. It is also, at this time, after thus using a warm Bath, that we are the least sensible to the impression of cold: for the quantity of blood brought to the surface of the body, and remaining in the superficial veins, keeps up a great degree of external heat, which the dry and non-conducting state of the skin is long in parting with, to the medium of even a cool atmosphere. That this statement is just, personal experience, and attentive observation of the effects produced on others, enables me to affirm: consequently, the fear expressed on such occasions is groundless. From what I have just said, it must not be concluded, that I recommend immediate exposure to the external air, in all instances, after warm bathing: there are exceptions in several states of disease. I only mean it as a general rule, that when a warm water, or vapour Bath, is used for cleanliness, or as a luxury, there is no danger from exposure to the atmosphere, immediately after its use, in the same manner, as if we had not used such means.

CASES.

A.

CASE OF CHRONIC CATARRH,

FROM THE CHANGE OF A WARM TO A COLDER CLIMATE.

Master P——, a young gentleman from the island of Jamaica, aged 11, has been in England three years for his education. The first winter he was much subject to coughs and colds, which did not leave him until the summer advanced, although he had every medical attention; the second year his complaints were more severe, nor did they leave him so perfectly as in the preceding year. He never seemed perfectly well; his growth was checked; and he carried the appearance of an animal which had been starved with cold, and ill fed, (which was not the case, though it is in some schools.) Very early in the third autumn, (1795) his former complaints were aggravated, his winter cough returned, and the defluxion from the chest was very great: to have looked at

him, you would have taken him for a little old man; his surface was dry and shrivelled, notwithstanding he wore flannel next his skin. He had, during the former winters, gone through the whole series of means, which similar complaints yield to, in children of a healthier class. In the first inflammatory attack, antimonials, with demulcents, occasional emetics, anodynes and squills, were administered, but nothing relieved him except the approach of summer. His expectoration was much tinged with blood; he was hot and feverish after eating, with a quickened circulation: so that there was every appearance of this local distress of the chest being likely to undermine the constitution, by forming hectic fever. It was then only October; the poor little fellow had therefore a melancholy prospect, if he were not to get relief until the following spring, or rather summer. Having myself seen the result of former means to relieve him, I was induced to add the vapour Bath to the other remedies employed: for the first three or four times of its use, a great quantity of dry scurfy indurated cuticle was thrown off; by the time he had used it once a day for a week, this ceased; and the Bath being

used of a moderate heat, the natural secretion of the skin was restored. It is astonishing with what rapidity he recovered by these means: his expectoration gradually ceased; his appetite and spirits improved; in short, he seemed to be new created; both his body and mind acquired increased vigour:—by continuing its use occasionally he was perfectly recovered. Instead of making him tender, it, on the contrary, by restoring equal action, gave him such vigour as enabled him to bear the winter's cold, and participate in the out-door amusements of his school-fellows: of which his former state of health had rendered him incapable.

OBSERVATIONS.

In looking at the above case, we trace the pernicious effects of a continued diminished temperature on the living system. Whether the change is effected by sending a child into a colder climate, or by delusive plans of bringing him up hardy in our own, the effects will be the same. The seeds of many complaints are sown in youth, particularly in female boarding-schools,—where a want of proper food and fuel brings on such torpor in

the unfolding of the system, as prevents many subjects ever attaining that perfect health, which nature, at their birth, had given them stamina to possess; had proper care been taken, and they had been allowed to evolve those faculties, with which they were originally endowed. We also see from this case, that the alternation of heat and cold is attended with the best possible effects—that the heat and sweating, instead of rendering him relaxed and susceptible of taking cold, on the contrary, brought on a healthy state of the skin, giving energy to his system, and enabling him to withstand the cold of winter with impunity—which he had never done before. Had he been left to the ordinary course of medical treatment, there can be but little doubt that he would, in the course of a year or two, have fallen a victim to consumption.—This is an extreme case: consequently, its effects are much more apparent.—From this I should conclude, that those who recommend or use the cold Bath, as a means of strengthening, would do well occasionally to use the hot Bath; as the alternation of these powers would mutually assist each other's action, and render the system, accustomed to these extremes,

less susceptible of the slighter ehanges of the atmosphere.—There was one more peeuliarity in this case; and though I have never seen it referred to by authors, yet I have several times remarked it in children: the teeth in this boy had shed very irregularly, and the second set were slow and irregular in replacing them; on observing his mouth, six months after this last attack, *i. e.* in the spring of 1796, I found all his teeth much advanced; for about the sixteenth part of an inch, they were unequally thick, and a corded line was observable on the enamel, as if it had been compressed when forming; above this they had expanded, and were larger and smoother, like healthy grown teeth. I cannot give a stronger idea of this appearanee, than by comparing it to the blighted bud of a rose, which has been checked in its growth by a few frosty nights, and, on the return of milder weather, unfolds itself, yet ever carrying the marks of the injury upon its outer leaves.—The growing process in animal life seems so analogous to vegetation, that one in some degree elucidates the other: this blight of the human constitution would probably have ended in phthisis; lesser shades of it, in more delieate eonstitu-

tions, would lay the basis of other chronic complaints.

Since writing the above, I mentioned the facts to an ingenious medical friend,* he informed me that Mr. John Pearson, surgeon to the Lock Hospital, had mentioned nearly similar effects in his lectures :—" Scrophula does not prevail so much in the polar zones, and between the tropics, as in these more temperate regions. It is remarkable that boys, brought from tropical climates, from the age of eight to twelve, almost uniformly become scrophulous. They bear the first winter tolerably well, but droop during the second, and the third generally proves fatal to them. This was strongly seen in the African boys, who were brought to this country to be educated on a plan, tried by the Sierra-Leone company. Almost all of them died of consumption ; and from the fatal effects of the change of climate, it was found necessary to abandon the plan."—The establishment for the African children was at Clapham, and Mr. Pearson had the charge of them. The scrophulous action was solely produced by change

* Mr. Jeffreys, assistant surgeon to the 3d regiment of guards.

of climate, as every care and attention was paid to their diet and cloathing. The boys had glandular enlargements about the neck, which broke, and suppurated; the bones of the legs, arms, and collars, became enlarged, particularly the nodes on the shins were larger than Mr. Pearson had observed on any other subjects: if they remained in England, after the appearance of these symptoms, consumption was the consequence.. Some of them became consumptive from the first; this was more particularly the case with the females. The above remarks, by so accurate an observer as Mr. Pearson, strongly corroborate the general tendency to scrophulous consumption, which such subjects possess, and which I have noticed in the case of Master P——; and I have no doubt, the use of the vapour Bath would have been of great service to these African children. Most of the animals brought from the tropics to this country, die of diseases in the lungs: more particularly the different tribes of Apes, which in general die of scrophulous consumption.

B.

CASE OF CHRONIC DIARRHŒA.

Mr. F——, of Newcastle, in the year 1787, was attacked with a bowel complaint, which was ushered in with fever. By the care of his physi cian, the violence of the complaint was diminished; but an obstinate looseness continued for many months, which resisted all the known means of relief. He was a patient of the late Dr. Hall, who was induced to try the vapour Bath (of which he was then the proprietor); he used it every other day, for some time; the determination of blood to the surface of the body, ending in a mild and pleasant diaphoresis, relieved the irritable state of the bowels; less mucus was secreted in the intestines; and by continuing its use once a week, for some time, his health was quite re-established.

OBSERVATIONS.

This case shews, that increased secretions, or defluxions from the bowels, are relieved by

determining to the skin. On this principle, the Bath will prove a remedial power in a variety of complaints.—-A case of Diabetes Mellitus, related by Dr. Allet, shews the consent between the skin and the kidneys. A countryman being heated laid himself down upon the grass: soon after this, a determination took place to the kidneys, and continued for above a year; his urine increased to sixteen pints in the twenty-four hours; his skin was dry and scurfy; he had great thirst, and a ravenous appetite. From this case, we see the danger of checking perspiration; as well as from the case of Mr. F. the advantages which may be derived by increasing the discharge by the skin, to relieve defluxions from other parts. This principle being established, as a law of the constitution, may be modified in a variety of ways, so as to produce salutary effects—according to the views of the physician who prescribes.

C.

CASE OF CHRONIC CATARRH,

IN AN ADULT.

Mr. M——, a gentleman subject to Catarrh every winter, applied to me in the spring of 1796. His attack, this time, was ushered in by rigors, and a smart attack of fever; the expectoration was tinged with blood, and continued profuse; his strength was much reduced. Having found so much benefit in the case of Master P——, I consequently made use of the same means. The vapour Bath lessened the secretion from the chest; and, in about a fortnight after its use (every other day), he was so much recovered, that there appeared nothing the matter except debility: I therefore allowed him to alternate the vapour with the cold Bath, *i. e.* to use the cold Bath three times a week, and the vapour Bath once. The beneficial effects of these means were astonishing: he gained strength rapidly; and his recovery was infinitely more complete than it had been in his

former attacks. The sputum in this patient, carried a very bad appearance; nor could it be distinguished from pus in this stage of his complaint. By continuing the alternate use of warm and cold bathing for some weeks, he was restored to perfect health—and this from a state which very much resembled consumption.

OBSERVATIONS.

I have found much benefit from the use of warm Baths in complaints of the chest; but I greatly prefer the use of the vapour Bath. I do this for two reasons:—1st, The immersion of the body into a denser medium, such as warm water, always affects the respiration; in some cases it is hurried, difficult, and at first distressing, which is avoided in the aeriform medium of the vapour Bath.—2dly, We have the power of introducing into the chest soothing or stimulant vapours, which act immediately on the seat of the disease.

D.

CASE OF ASTHMA.

Mr. B——, aged 40, had been for several years troubled with an Asthma, which he attributed to taking cold in damp sheets, when on a journey. His expectoration was considerable: he was generally afflicted with his complaint; but it was always aggravated by being exposed to the causes which excite catarrh in other subjects, viz. a wet and cold atmosphere, or having his cloaths wet. He has found relief from bleeding, in the feverish state, and afterwards from a blister. He was generally taking some expectorant; but was never well. He has found the most relief from taking as small a quantity of liquid as he could; and in the paroxysms, a small quantity of strong coffee gives him the most ease.—This was his state when he consulted me in the winter of 1794. He was ordered to use the vapour Bath every other day; when he had made use of it for half a dozen times, his expectoration began to dimi-

nish;—finding this, I had then little doubt of relieving him, and making the skin act so as to relieve the oppressed lungs. He was now ordered to use the Buxton Bath every other morning, as a cold Bath—that is, merely to plunge over head, and dress immediately;—this was in conjunction with the vapour Bath, which was still continued twice a week. The Buxton temperature was lowered every time a few degrees, until cold immersion took place; in the course of six weeks, he found himself so much relieved, that he thought himself well; his expectoration lessened, and the wheezing respiration seldom troubled him, even in the night: his strength was rapidly restored by the cold immersion; and the morbid susceptibility of his system seemed to have vanished—as he had no return of his fits from the causes which had invariably produced them before.

The result of this case was truly gratifying to me; as it shews the power we possess of drawing off morbid determinations, by making the skin act,—as well as the breaking the chain of morbid associated motions, by the alternate action of the vapour and cold Bath.

E.

CASE OF WATER IN THE CHEST,

WITH DROPSICAL SWELLINGS OF THE LEGS.

Mr. ——, aged 30, (of Newcastle-upon-Tyne,) in the spring of the year 1796, applied to me, on account of a short teasing cough, and a difficulty of breathing, which had troubled him for some time. He was rather a gay young man; and his habits had been those of a *bon vivant*. He had, for two or three years, been subject to this complaint: but never to the degree he had it at present. His legs swelled at night; and his nights were disturbed by frequent spasmodic affections of the chest, as if he were going to be strangled. Being of a full habit, I wished him to lose some blood; but he had a great aversion to the operation, and wished any other means to be tried to relieve him. Having lately seen such relief in Master P.'s case, I was induced to try the vapour Bath:—he used it every day for a week; during which time, he took an aperient electuary every

night, and an antispasmodic draught after it.—I mean by this to shew, that I did not rely entirely upon the Bath; though he had taken much more efficient remedies, prior to this, with little or no beneficial effect, he had not used the Bath more than three times, before he found considerable relief from it; his breathing was better, and the swelling of his legs much fallen. At the end of a week, he used the Bath every other day; and at the end of a fortnight, he was so much recovered, as to induce me to order him to alternate the cold with the vapour Bath—that is to say, to use the cold Bath twice a week, and the vapour Bath once. From this time, his recovery was most rapid; and, in a short time, his health was more established than it had been for some years. He continued to use the cold Bath during the summer; and, in the autumn and winter, occasionally, the vapour Bath; by which means, he braved the following winter with less inconvenience than he had done for some years previously.

OBSERVATIONS.

From this case we observe, that the Bath has not only a primary effect upon the exhalants, but

has also a powerful effect upon the absorbents ; by which extravasated lymph in the cellular membrane, both of the lungs, and different parts, is taken up, and the system relieved of these dangerous effusions.

F.

CASE OF LUMBAGO.

Mr. ——, aged 45, was, in the autumn of 1794, attacked with rheumatism. He had severe pain in the loins and right hip; his complaint was ushered in by fever. He was in the country at the time, and had undergone the accustomed routine of treatment for some months. His complaint terminated by leaving a contraction of the muscles of the hip, and a stiffness of the lumbar vertebræ, attended with pain on motion: he was obliged to use a stick in walking; and when he arose from his chair, it was with pain and difficulty. He had been in this state for many months—when, in June 1796, he applied to me, and I received him as a patient at the Baths. He was ordered to use the Bath once a day, for a quarter of an hour; after using the Bath for some days, he informed me, that he had more power of motion when under its influence, than he had when he first began its use—although the stiff-

ness soon returned afterwards. He was now ordered to use it twice a day, for ten minutes. Pursuing this plan, in a few days he observed that the stiffness did not return so soon. By continuing this superficial excitement twice a day, for some time, the morbid action of the deeper seated membranes yielded to this plan. During the course of this treatment, the patient's health and spirits were considerably improved; no appearance of *debility* from the frequent use of the Bath; the limb which had begun to waste, from want of muscular action, recovered its plumpness from this process, and frictions with fine flannel. As the use of the limb became restored, he desisted from the frequent use of the Bath; and with a view to prevent the return of rheumatic action, in that or other parts, the morbid sympathy of the system was guarded against by the *alternate* use of the vapour and cold Bath.—With this treatment, I had the pleasure of seeing the patient perfectly recover.

G.

CASE OF LEPROSY.

Mr. W——, of Sunderland, had been for many years subject to this complaint. He had visited Harrowgate, Buxton, and most of the watering places in the island—from some of which he occasionally got a little relief; but his disease always returned, in a short time, worse than before. He had tried every species of internal remedy, with nearly the same effect as the watering places, when, in August 1795, he came to Newcastle, to try the effect of the vapour Bath. His upper and lower extremities, as well as the whole body, were covered with large white scales—humid in some parts, and accompanied with much itching during the night, or upon the use of exercise. Hewas ordered the use of the Bath, twice a week; a large quantity of desquamated cuticle was thrown off, on each application of the Bath, for three or four times; the skin then became softer, and smooth to the touch; and, by continuing its use,

occasionally, for some time, he was more relieved than he had been from any other mode of treatment. Whenever there appeared a disposition in the skin to fall baek to the morbid state of action, the use of the Bath, for a few times, restored it again to a healthy state.

OBSERVATIONS.

It is not only in leprous cases that I have found the vapour Bath of use, but in complaints of another class, viz. Herpes, or that speeies of eomplaint forming slight exuleeration upon the skin—spreading over different parts of the body, being troublesome and difficult to heal :—also in a complaint of an obstinate nature, the Psora Diffusa, which, in old people, is generally very untractable. Dr. Marcard mentions, in his treatise on Baths, that an accurate observer had remarked, that the Danes would never be free from eutaneous diseases, until they introduced the use of the Russian Baths : he had resided in both countries, and was enabled to draw this conelusion from experience. The Doetor also adds, that he believes the same means would be the most likely to destroy that terrible disease in Poland, known under the name of Plica Polonica.

II.

CASE OF SCIRRHOUS TUMOUR OF THE BREAST.

Mrs. ——, aged 40, has had four children, to all of whom she was a nurse. In the year 1795, she applied to me, on account of a tumour in the right breast. She had been much alarmed by a surgeon she had consulted, who advised the extirpation of the indurated gland. She was troubled with shooting pains in the part; and the tumour had lately enlarged, with increased pain. In this state, I could not give a favourable prognosis; at the same time, I told her, as there was no immediate hurry for the operation, there was time to try means to avoid that dreaded alternative. Her health was not affected by previous disease; and as her constitution was good, I ventured pretty freely with evacuants, bleeding and purging. When the system was thus relieved, I ordered her the vapour Bath twice a week. I had infinite satisfaction in marking the benefit she received from this plan: the pain gradually lessened, after

each time of bathing ; and, in the course of a few months, the indurated part was quite absorbed : so that no vestige of her complaint remained. I have no hesitation in saying, that I believe, had this case been neglected, it would have terminated in cancer : for at that period of life, when, from any cause the glands of the breast became tumefied, painful, and, from the death of the part, cause an external opening, there is little hope of its terminating otherwise than in an incurable sore.

I.

CASE OF SCIRRHOUS TUMOUR OF THE BREAST.

Miss ——, aged 27, consulted me, in the latter end of the year 1802, for an indurated tumour in the left breast. She was sensible of its having been there for the last three years; but as it caused no pain she was not induced to ask advice respecting it. Latterly, she has occasionally had some darting pains shooting through the part, which has induced her to consult me. The tumour is about the size of a small walnut, perfectly detached. As she was of a delicate habit, I did not pursue the evacuating plan; but, from the benefit I had seen in several cases, I ordered her to begin immediately with the vapour Bath, which she used twice a week, for some time. By pursuing this plan, and rubbing the part every night with a discutient ointment, the indurated gland became soft, all pain ceased; and, at the end of two months, she regarded herself as well.

N. B. I saw this lady three years afterwards, and she had continued well; nor had she had any return of pain.

OBSERVATIONS.

I do not mean, by giving these two cases, to convey an idea that the vapour Bath will cure a cancer :—I only mean to shew, that there are many tumours of the breast, which have been deemed cancerous, that have been cured by these means—and which, probably, would have terminated in cancer, had they been neglected.

Further observations on the power of the vapour Bath in cancer, may be seen in the account of two cases of cancer published by me some years ago.

K.

CASE OF ENLARGED MESENTERIC GLANDS.

Master ——, aged 10, of a scrophulous habit, has been subject to sore eyes; the glands of the neck have some times swollen and suppurated; his upper lip has generally been enlarged. For the last year, the belly has swelled, and the limbs wasted. He has been supposed to be troubled with worms, for which he has taken a variety of medicines, without relief.—At the time he applied to me (in the autumn of 1802), his skin was remarkably dry, and the hair of the head came much out; but what remained had a dry crispness, as if it had been dried with warm ashes; the abdomen was much swollen, and appeared like a child in a dropsy—though, to the touch, there did not appear to have been any positive effusion at that time. He had been under the care of many medical men, and been constantly taking medicine. In this state, I hardly expected to be

of any service to him; but, as the skin was in such a state of torpor, I thought the vapour Bath might relieve him in that point. He therefore began its use, three times a week: in about a month after its use, appearances changed, so much for the better, that I did not entirely look upon it as a lost case. He was therefore ordered some saline alterative medicines, and to continue the Bath. At the end of the following month, the swelling of the belly was much diminished, and the limbs were acquiring a degree of plumpness demonstrative of returning health. The greatest change was apparent in the skin, which, at first, was, as I have already described it, dry and torpid, and the colour or complexion was of a dirty, muddy, or squalid appearance: (this did not arise from neglect, but from disease.) After this time, however, it had a different aspect: the complexion cleared,—the skin became soft and pleasant to the touch,—the hair regained a healthy state, and growed rapidly; the swelling of the abdomen subsided. He was now so far recovered that I ordered him to use the cold Bath once a week, and still to continue the vapour bathing twice a week. By persevering some

time in this plan, he acquired such a degree of health, as he had not enjoyed for some years.

OBSERVATIONS.

From the benefit derived in the above case of scrophulous affections, and in another scrophulous disease of the lungs, in the case A. there is every reason to presume, that great relief may ensue in a variety of diseased actions, having their origin from the same cause. It appears from observations of Mr. John Pearson, that there is no form of scrophula, which our cold and humid atmosphere is not capable of exciting in the natives of Sierra Leone. Puny and delicate children of our own island seem to be, in respect to climate, nearly in the same situation as are the children of a more southern clime. When the energy of their system is unfolded by warm bathing, and their debility overcome, then an alternation of cold bathing is of much use. It is in such circumstances that sea bathing is of important service.

CONCLUSION.

The foregoing Cases have been selected from numerous others which might have been added; but as those related, tend to elucidate the power of the vapour Bath generally upon the system, I have thought it better not to swell out this account unnecessarily. These cases shew the power we possess, by means of the Bath, to relieve morbid actions on the chest, on the intestines, and on the different membranes of the body. That many external inflammatory affections, may be relieved by the application of cold I am well aware, also that many internal inflammatory affections, attended with heat on the surface of the body, may be relieved by cold affusion: but I am also of opinion, that there are many states of the system, where dangerous inflammatory affections exist, without marked heat on the surface; In such states the application of cold would be of no service; and this is the state in which the vapour Bath produces such beneficial effects: the whole surface of the body is excited to great action; the oppressed mem-

branes of the head, intestines, or chest, are relieved by the revulsion of a large quantity of blood flowing to the surface of the body, and the morbid fulness of the vessels is lessened by a copious secretion of perspiration. The experience of the Russians, in their treatment of fevers, shews the efficacy of a similar practice; and there are many states of fever in which the cold Bath would be pernicious; yet by the previous use of the vapour Bath, the body acquires that state of feeling, in which the cold effusion would be salutary.

I might have added many cases deriving benefit from the vapour Bath: after accidents, such as the fracture and dislocation of bones, where effusions remained on the ligaments of the joints, or under the sheaths of the tendons; also in torpid or paralytic limbs, where the disease did not arise from effusion on the brain, but from external causes; in some cases of torpor, of the sense of hearing, smelling, and tasting, arising from cold, I have known benefit derived from the vapour Bath. I could also add several recent cases of scrophulous affections, in which great benefit has

been experienced; but as they are still under treatment, it would be premature to mention them now: I shall therefore wait a further opportunity.

FINIS.